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ABSTRACT

The Internet offers trade and industrial (T&I) educators a wealth of readily available information for use as teaching aids, supplemental materials, and laboratory resources. These materials provide many distinct benefits; however, there are also several issues that must be addressed when using the Internet as an adjunct in teaching. These benefits and issues must be weighed when deciding whether to use Internet resources in T&I classrooms and laboratories. Above all, using the Internet in T&I programs helps students develop computer and related technical skills. T&I students may use the Internet in many ways; for example, students can conduct research on historical aspects of their discipline, find vendor sites, or explore employment opportunities. The Internet can also be used for integration activities with academic disciplines. Students will need access to some type of Internet service provider. Security-related issues include ensuring that students do not gain access to individual student, school, or district information and ensuring that students do not access sites containing inappropriate materials. T&I teachers must address these same security issues when deciding whether to use course software to place portions of a class on the Internet. T&I teachers must also realize that using course software creates a time constraint. (MN)

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USING THE INTERNET IN TRADE AND INDUSTRIAL EDUCATION

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Trade and industrial (T&I) educators have a multitude of resources available on the Internet for teaching their respective disciplines. These resources range from technical information, posted by manufacturers, teaching resources, such as lesson plans, and course software for putting an individual instructor's course on the Internet. Determining the accessibility and appropriate use of these resources is important, as they have many distinct benefits. There are also several issues with using the Internet as an adjunct in teaching. All of these aspects must be considered when trade and industrial educators incorporate this technology into their classrooms and labs.

Advantages of using the Internet as a teaching resource

One of the primary advantages to utilizing the Internet as a resource in a trade industrial program is the development of computer and related technical skills. Through the process of having students access class/lab information on the Internet, they will be developing computer skills that will carry over to other classes and the workplace. Downloading documents, editing, saving and printing files, and honing research skills are just some of the skills that can be developed

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For trade and industrial educators, a wealth of information is readily available for use as teaching aids, supplemental materials and lab resources. Many manufacturers from a variety of disciplines within T&I have websites, along with professional organizations and journals. Much of this information can be downloaded and/or printed. Many T&I teachers struggle with limited budgets for teaching materials. The Internet offers a tremendous storehouse of information for a minimal cost.

Because of its wealth of information, the Internet can be used for various types lessons in T&I programs. Students can conduct research on historical aspects of their discipline, find vendor sites or explore employment opportunities.

Due to its knowledge base, the Internet can be used for integration activities with academic disciplines. T&I educators can help students enhance their Language Arts skills through research assignments, develop an appreciation for the historical aspects of their occupation, and improve logic and problem solving skills through the use assignments jointly created by T&I educators and academic teachers.

Issues with Utilizing the Internet

The issue of access to the Internet is a pertinent one. Students will need access to some type of Internet Service Provider (ISP) in order to complete any assignments that involve the Internet. Most schools have this access available, either through a central location, such as a media center, computer lab, or in some cases, through individual classroom/labs that have computers with Internet access. Outside of school, students can

access the Internet from home or other local sources, such as public libraries.

Along with access to the Internet comes security. T&I educators and schools must take steps to ensure students do not have access to individual student, school or district information. Many enterprising students have found ways to breach security measures instituted by schools, and T&I educators must become well versed in the various security protocols installed by their employing district.

Related to security is the issue of appropriate material. There are countless websites with material that is inappropriate for viewing in a school setting. Many schools have "filters" on their computer systems to prevent viewing of these sites. T&I educators must be vigilant in this area: students should only be viewing course-related material.

A caution must also be observed. The Internet offers a multitude of distractions for students and many important assignments can be derailed by these "time-wasters". T&I educators must monitor students time on task, to ensure students are working on their assigned task.

Advantages of using course software as a teaching resource

T&I Educators have the ability to place portions of their classes on the Internet. Course software, such as that provided by vendors like Blackboard or WebCT offer instructors a method for posting notes, handouts, quizzes/tests, calculating grades and even holding online "chats". By doing this, both instructor and students can develop important computer and technical skills. Additionally, the course software offered by

these vendors is a template that can help with teacher organization of material.

By placing material on a course site, and requiring retrieval of the information, students also develop responsibility for their own learning. Having the information readily available for students also allows them to work and their own pace, and the use of the computer may be a motivational factor in the completion of assignments. Having a course site also allows for the creation of alternative lessons that be used for homework assignments, or when the primary T&I instructor is absent.

T&I teachers, through the use of the Internet and course software, also have an additional potential bonus when using these technologies. Traditional T&I programs, often seen as "low-tech", can become a technology leader in the school in which they are housed. This can assist with student recruitment, skill development, student job placement and public perception of the program.

Issues with Utilizing Course Software

T&I educators interested in utilizing course software must be aware of the aforementioned security issues. It is suggested that students be given access to course site on a password basis, and that only students enrolled in the specific T&I program be given access. T&I educators must take steps to ensure the security of such information as course quizzes/tests and student grades.

T&I educators should also be aware that utilizing course software creates a time constraint. It takes considerable time to customize a course site, and to post course

materials that are user-friendly when viewed through the Internet. However, as the course is developed, it may require less frequent modification over time.

Related to the time issue is technical expertise. T&I educators must have an appropriate level of computer proficiency to create and maintain a course site. Finding a technical support person in the building or school district to assist in this area may be a possibility, but the ultimate responsibility for course upkeep will likely fall with the T&I educator.

Moving Trade and Industrial Programs Forward

Most T&I related occupations, from automotive technology to welding, utilize computer technology in one of more facets of operation. Utilizing the Internet as a teaching resource in these programs will help introduce students to computer technology, and begin to develop these skills, as they hone their occupation-specific skills. This will enable graduates to enter the workplace or postsecondary education with a larger set of skills than would be possible otherwise. In addition, T&I educators will develop skills that will improve their programs and provide worthwhile professional development opportunities.

Websites for Course Software

- http://www.blackboard.com/
- http://webct.com/